APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER
ZAMAN, FAISAL M

ART UNIT	PAPER NUMBER
2112	

DATE MAILED: 01/31/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	10/796,350	NALAWADI ET AL.
	Examiner	Art Unit	
	Faisal Zaman	2112	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>08 March 2004</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-23</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-23</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>08 March 2004</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☒ Other: <u>See Continuation Sheet</u>.

Continuation of Attachment(s) 6). Other: Examiner-cited non-patent literature (2).

DETAILED ACTION

Claim Objections

1.   Claim 1 recites the limitation "the address range" in line 4, and "the set of

resources" in line 5. There is insufficient antecedent basis for this limitation in the claim.

2.   Claims 8-10 objected to because of the following informalities: as currently

written, the claims depend on Claim 6. The examiner believes the Applicant may have

meant to have the claims depend on independent Claim 7.

        Appropriate corrections are required.

Claim Rejections - 35 USC § 112

3.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly
> claiming the subject matter which the applicant regards as his invention.

4.   **Claims 1-6** are rejected under 35 U.S.C. 112, second paragraph, as being

indefinite for failing to particularly point out and distinctly claim the subject matter which

applicant regards as the invention.

        Regarding Claim 1, it is unclear as to what is generating the interrupt. The

examiner would interpret this limitation, for examination purposes, to mean "determining

which resources in a set of resources in a computer system are configured to generate

an interrupt; and assigning an address range to the resource, the address range being

used to generate an interrupt when accessed for each resource in the set of resources

by an operating system for the computer system."

All claims that are not specifically addressed are rejected due to a dependency.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

5.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6.   **Claims 1, 2, and 4** are rejected under 35 U.S.C. 102(b) as being anticipated by

Marisetty (U.S. Patent No. 5,590,312).

Regarding Claim 1, Marisetty discloses a method comprising:

Determining a resource in a computer system to generate an interrupt (Column

2, lines 55-67); and

Assigning an address to the resource (Column 7, lines 39-42), the address range

to generate an interrupt when accessed for each resource in the set of resources by an

operating system for the computer system (Column 7, lines 45-49).

Regarding Claims 2 and 4, Marisetty discloses wherein the address ranges are

input output address ranges and system memory address ranges (Column 7, lines 39-

42).

Claim Rejections - 35 USC § 103

7.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

8.   **Claims 3 and 5-23** are rejected under 35 U.S.C. 103(a) as being unpatentable

over Marisetty, in view of Stanley (U.S. Patent No. 6,219,742).

Regarding Claim 3, Marisetty discloses the method of Claim 1 as discussed

above. Marisetty does not expressly disclose the method further comprising correlating

an advanced configuration and power interface source language code method with an

address range.

In the same field of endeavor (e.g. software control of hardware in a computer

system), Stanley teaches correlating an advanced configuration and power interface

source language code method with an address range (Stanley, Column 4, lines 44-52,

ie. the addresses of the register blocks).

Accordingly, it would have been obvious to one of ordinary skill in the art at the

time the invention was made to have combined Stanley's teachings of software control

of hardware in a computer system with the teachings of Marisetty, for the purpose of

having software assisted solutions to hardware-related problems in order to mitigate risk

(see Stanley, Column 3, lines 1-3). Marisetty also provides motivation to combine by

stating it is an object of the invention to provide software emulation in place of

unavailable hardware in order to use less circuitry (see Marisetty, Column 2, lines 46-

49).

Regarding Claim 5, Stanley discloses the following limitation, which Marisetty

does not expressly disclose:

Correlating a system control interrupt with an advanced configuration and power

interface source language code method (Stanley, Column 1 line 64 – Column 2 line 6,

and Column 5, lines 38-46, an ASL code method is used when the system is in ACPI

mode [see Column 4, lines 23-27]).

The motivation used in the combination of Claim 3, super, applies equally as well

to Claim 5.

Regarding Claim 6, Stanley discloses the following limitation, which Marisetty

does not expressly disclose:

Registering a device driver with an address range by the operating system

(Stanley, Column 10, lines 25-44).

The motivation used in the combination of Claim 3, super, applies equally as well

to Claim 6.

Regarding Claim 7, Marisetty discloses a method comprising:

Receiving an interrupt from an address access request (Marisetty, Column 8, lines 5-9);

Determining the source of the interrupt based on the address access request (Marisetty, Column 8, lines 11-13); and

Invoking code assigned to the address access request (Marisetty, Column 8, lines 13-16).

Marisetty does not expressly disclose invoking an advanced configuration and power interface source language (ASL) code to the address access request.

In the same field of endeavor, Stanley teaches invoking an advanced configuration and power interface source language (ASL) code to an address access request (Stanley, Column 11, lines 5-65, it is well known in the art that a control method is written in ACPI Machine Language, which is a low-level version of ASL, as evidenced by the ACPI Specification pages 13 and 14, cited below under Relevant Art).

The motivation used in the combination of Claim 3, super, applies equally as well to Claim 7.

Regarding Claim 8, Stanley teaches notifying a source of the address access that the ASL code (ie. the control method) completed (Stanley, Column 11, lines 33-37).

Regarding Claims 9 and 10, Marisetty discloses wherein the address access request is an input output address request and wherein the address access request is a system memory address request (Column 7, lines 39-42).

Regarding Claim 14, Marisetty discloses a device comprising:

A code segment to handle a request of a resource (Marisetty, Column 8, lines 5-9, ie. the code located within the I/O controller 404);

An address protection module to manage the protection of an address space (Marisetty, Column 8, lines 9-11, the I/O trap logic 408); and

An operating system level interrupt handler module to receive an interrupt when the address protection module detects an address space access and to invoke the code segment corresponding to the address space access (Marisetty, Column 8, lines 11-16, the SMM handler).

Marisetty does not expressly disclose wherein the code segment used to handle a request of a resource is an advanced configuration and power interface source language (ASL) code segment; and

The code segment that is invoked is an ASL code segment.

In the same field of endeavor, Stanley teaches an advanced configuration and power interface source language (ASL) code segment to handle a request of a resource (Stanley, Column 11, lines 5-65); and

An operating system level interrupt handler module to receive an interrupt when a module detects an address space access and to invoke the ASL code segment corresponding to the address space access (Stanley, Column 11, lines 5-65, ie. the General Purpose Event handler).

The motivation used in the combination of Claim 3, super, applies equally as well to Claim 14.

Regarding Claim 15, Marisetty discloses wherein the address protection module is an input output protection module that generates a general protection fault (Marisetty, Column 8, lines 5-16, it is well known in the art that a general protection fault is an interrupt [or exception] that is initiated when a device attempts to access a protected I/O address).

Regarding Claim 16, Marisetty discloses wherein the address protection module is a memory protection module that generates a page fault (Marisetty, Column 7, lines 54-63, it is well known in the art that a page fault is an interrupt [or exception] that is initiated when a device attempts to access a protected system memory address).

Claims 11-13 are directed to an apparatus of the method of Claims 1-6, and **Claims 17-19** are directed to a system of the method of Claims 1-6. Marisetty and Stanley teach, either alone or in combination as stated above, the method as set forth in Claims 1-6. Therefore, Marisetty and Stanley also teach, either alone or in combination as stated above, an apparatus as set forth in Claims 11-13 and a system as set forth in Claims 17-19.

Claims 20-23 are directed to a machine readable medium containing instructions

to execute the method of Claims 7-10. Marisetty and Stanley teach, either alone or in

combination as stated above, the method as set forth in Claims 7-10. Therefore,

Marisetty and Stanley also teach, either alone or in combination as stated above, a

machine readable medium as set forth in Claims 20-23.

Relevant Art/Prior Art of Record

9.   The Advanced Configuration and Power Interface Specification, Revision 2.0b,

October 11, 2002 is cited as relevant art.

10.   The prior art made of record and not relied upon is considered pertinent to

applicant's disclosure. Wilcox et al. (U.S. Patent No. 5,764,999) discloses an enhanced

system management mode with nesting. Lewis (U.S. Patent No. 6,167,511) discloses a

method to reflect BIOS set up changes into ACPI machine language. Nijhawan (U.S.

Patent No. 6,185,677) discloses automatic generation of ACPI source language for

peripheral resource configuration. Holm et al. (U.S. Patent Publication No.

2002/0152334) discloses a method for PCI bus detection in a logically partitioned

system. Ewertz (U.S. Patent No. 6,499,102) discloses a method of dynamically

changing the lowest sleeping state in ACPI. Tyner (U.S. Patent No. 6,564,276)

discloses access restriction of environmental circuits. Zimmer et al. (U.S. Patent

Publication No. 2003/0188173) discloses a hardened extended firmware interface

framework. O'Shea (U.S. Patent Publication No. 2004/0128568) discloses a method for

firmware control invocation from power management. McKee et al. (U.S. Patent No.

6,772,372) discloses a system and method for monitoring unaligned memory accesses.

Culter et al. (U.S. Patent Publication No. 2004/0243534) discloses a system and

method for generating ACPI machine language tables. Plante et al. (U.S. Patent No.

6,931,553) discloses preventing general purpose event interrupt storms in a computer

system. "I/O Ports Blocked from BIOS AML", by Microsoft Corporation, discloses a

method of protecting critical I/O addresses in a computer system.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Faisal Zaman whose telephone number is 571-272-

6495. The examiner can normally be reached on Monday thru Friday, 9 am - 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Rehana Perveen can be reached on 571-272-3676. The fax phone number

for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

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published applications may be obtained from either Private PAIR or Public PAIR.

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